

P-3

Office Action Summary	Application No.	Applicant(s)	
	09/824,612	PETERS, ERIC M.	
	Examiner	Art Unit	
	Leanna Roche	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 16-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-15, drawn to a retroreflective article, classified in class 428, subclass 315.7.
- II. Claim 16-25, drawn to a method for the production of a reflective article, classified in class 427, subclass various.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions of Group II and Group I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the retroreflective article can be made by multiple materially different processes including deposition under vacuum, metal sputtering under vacuum, plasma metal deposition under vacuum, and thin metal film lamination under heat and pressure.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Donald Bobak on November 11, 2002 a provisional election was made with traverse to prosecute the invention of Group I,

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claims 1-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 16-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

5. The drawings are objected to because in Figure 4, reference number 54, the reflective layer, and reference number 60, the protective coating, appear to be pointing to the same thing. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

6. Claim 7 is objected to because of the following informalities: in line 4 of Claim 7, change "polyacetates" to read --polyacetate--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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9. Claim 1 recites the limitation "the surface" in line 4. There is insufficient antecedent basis for this limitation in the claim.

10. Claim 2 recites the limitation "said layer of metal" in line 2. There is insufficient antecedent basis for this limitation in the claim. For the purposes of examination, this limitation has been read to mean "said layer of reflective material".

11. Claim 4 is indefinite because it claims pores having diameters "less than the wavelength of visible light". This limitation is indefinite because the minimum wavelength of "visible light" can vary based on the source detecting the light and is based on individual perception which can vary widely. The examiner suggests changing this limitation to the numerical value of "less than 450 nm" as indicate in Applicant's specification at page 6, lines 13-16.

12. Claim 6 is rejected as being indefinite because Applicant claims a substrate "in the form of a fabric". It is unclear what Applicant means by this phrase. Is Applicant claiming a fabric, or something that appears to be a fabric but is not? Because the language of this claim is unclear, at present the examiner has not been able to interpret Applicant's meaning, and therefore has not been able to search and apply art that is particularly relevant to this limitation. The lack of an art rejection at this stage of examination in no way indicates allowable subject matter, but rather indicates an explicit need for clarification of the meaning of the claim.

13. Claim 11 recites the limitation "about 0.001 to about 0.0001 inches (about 0.025 to about 0.0025 mm)". The examiner suggests deleting the parenthetical phrase from this claim since "about 0.001 to about 0.0001" inches actually equals "about 0.0254 to

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about 0.00254 mm", and should be written as "about 0.03 to about 0.003 mm" if one takes significant figure reporting into account.

14. Claim 14 recites the limitation "the side" in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1-5, 7, 12, 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Lasch et al. (USPN 5082715).

Lasch teaches a conformable marking for road markings comprising a microporous thermoplastic polymer base layer having an adhesive layer on the bottom surface and a retroreflective material imbedded into the top layer adhered to the top surface of the base. The micropores of the base layer can range from 0.01 μm to 4 μm (100 Angstroms to 40000 Angstrom or 10 nanometers to 4000 nanometers). This reads on Applicant's retroreflective article comprising a microporous substrate having pores with a diameter of less than 0.5 μm , having pores less than the wavelength of visible light, and being a nanoporous polymeric film. This also reads on Applicant's layer of reflective material partially obscuring a plurality of pores of the substrate. The top layer of Lasch may be comprised of a polyurethane binder having microspheres imbedded

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therein. The polyurethane binder of Lasch reads on Applicant's protective coating material. The microporous base layer of Lasch may be comprised of various materials such as polyolefins, polyamides, polyesters, and polytetrafluoroethylene among others (Column 4, lines 3-22). The microspheres of Lasch read on Applicant's optical performance enhancing characteristic. The adhesive on the bottom of the base layer of Lasch reads on Applicant's adhesive layer adhered to the side opposite the reflective material layer. Lasch describes adhering their base sheet to a road via the adhesive on the bottom surface of the base layer. The road reads on Applicant's carrier substrate member.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 8-10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lasch et al. (USPN 5082715) as applied to claim 1 above, and further in view of Morris et al. (USPN 5673148).

Lasch teaches using transparent microspheres for retroreflectivity, but does not specifically teach using metal or dielectric coatings such as aluminum. Morris discloses retroreflective elements comprised of transparent microspheres having a coating of aluminum, silver or a dielectric material on a hemispherical surface of the microsphere.

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The these coatings are well-known in the art to provide brighter retroreflective performance, including brilliant daytime and ambient color reflective members (Column 4, lines 19-39). Therefore, it would have been obvious to the skilled artisan at the time this invention was made to use transparent microspheres having a coating of aluminum, motivated by the desire to produce a reflective layer with brighter retroreflective performance.

Lasch discloses the use of microsphere retroreflective layer, but does not disclose the use of a retroreflective layer using a corner cube design optical performance enhancing characteristic. Morris discloses that it is well-known in the art of retroreflective articles that cube-corner retroreflective elements can be used in place of transparent microsphere reflective elements (Column 3, lines 15-32). Therefore, it would have been obvious to the skilled artisan at the time this invention was made to substitute cube-corner reflective elements for the microsphere reflective elements since their equivalence is well-known in the art of retroreflective articles and the selection of either of these known equivalents would be within the level of ordinary skill in the art and obvious motivated by cost and availability.

19. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lasch et al. (USPN 5082715) and Morris et al. (USPN 5673148) as applied to claim 10 above, and further in view of Walter (USPN 5660768).

Neither Lasch nor Morris specifically discloses the thickness of the reflective layer in a retroreflective article. Walter, however, discloses reflective structures having

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a thickness from about 0.0005 to 0.03 inches for producing road markers (Column 4, lines 35-41). The retroreflective structures of Walter provide low profiles that allow automobiles to drive over the road markers while allowing incidental light from distant automobiles to be retroreflected (Column 2 line 66 - Column 3 line 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to produce a retroreflective article having a reflective layer within Applicant's presently claimed range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233). In the present case, it would have been obvious to use a reflective layer having a thickness within Applicant's claimed range because it is known in the art that a retroreflective layer of this thickness can be used to form a retroreflective article, i.e. a road marker, that has a low profile for automobiles to drive over the marker, while still maintaining satisfactory retroreflective capabilities.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jonnes (USPN 3785719) teaches roadway lane retroreflective structures which may be comprised of aluminum coated transparent microspheres or cube-corner reflectors. May (USPN 4534673) teaches elastomeric pavement markers comprising aluminum coated glass microsphere retroreflective layers, the reflective

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layers having a dry film thickness about equal to the focal length of the microspheres, the microspheres being about 20 microns in diameter.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leanna Roche whose telephone number is 703-308-6549. The examiner can normally be reached on Monday through Friday from 8:30 am to 6:00 pm (with alternate Mondays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



lmr

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